

## REMARKS

In the Office Action dated April 24, 2009, professionally prepared drawings were required to embody the handwritten changes that were made previously in Figures 2-6. Also, Figure 6 was objected to because of the duplicate use of reference numeral 13 therein.

In response, professionally prepared versions of Figures 2-6 are submitted herewith, and in Figure 6 reference numeral 13 that designates the feedback/oscillation detector block has been changed to reference numeral 16. A corresponding editorial change has been made in the specification.

A further editorial change has been made in the specification to delete the Reference List, since such a Reference List is normally not appropriate for inclusion in a United States specification.

Claims 15-20 and 22-25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Williamson et al in view of Kates et al.

This rejection is respectfully traversed for the following reasons.

As an initial observation, Applicants note that the Williamson et al reference was previously relied upon by the Examiner as a basis for anticipating the previous versions of the aforementioned claims. This rejection was the subject of the appeal that was previously filed by the Applicants. In response to the Submission of Applicants' Appeal Brief, the Examiner re-opened prosecution and substituted a new rejection, namely anticipation by Nielsen et al, in place of the anticipation rejection based on Williamson et al. The Examiner did not, however, provide any specific response to Applicants' arguments concerning the Williamson et al reference, but merely stated that those arguments are moot in view of the new ground of rejection

(i.e., the rejection based on Nielsen et al). Applicants must assume, however, that the Examiner considered Applicants' arguments concerning the Williamson et al reference to have merit, otherwise there would have been no reason to re-open prosecution and rely on a new reference (Nielsen et al) and not rely at all on the Williamson et al reference.

In response to the new rejection based on Nielsen et al, Applicants provided the present set of claims and presented arguments to distinguish those claims over the teachings of the Nielsen et al reference.

In response, the Examiner rejected the new set of claims based on the Kates et al reference, and Applicants provided arguments to distinguish the present claims over the teachings of the Kates et al reference.

Now the Examiner has re-introduced the Williamson et al reference as the basis for the aforementioned current rejection based on a combination of Williamson et al and Kates et al. Again, however, the Examiner did not specifically respond to Applicants' arguments concerning the Kates et al reference, but again merely stated that those arguments are moot in view of the new ground of rejection.

Applicants are therefore in the position of having presented extensive and detailed arguments with regard to both the Williamson et al reference and the Kates et al reference, to which the Examiner has never responded during several years of prosecution. The Examiner has merely repeated previous arguments presented by the Examiner, but has not provided any specific refutation or detailed response to Applicants' extensive and detailed arguments as to why the Examiner's statements concerning the Williamson et al reference and the Kates et al reference are incorrect. Applicants would not be permitted to file a response to an Office Action wherein the

Examiner's arguments in the Office Action were ignored or not responded to. Applicants respectfully submit the converse is also true, and it does nothing to advance prosecution when the Examiner does not provide the Applicants' with the benefit of any reasoning on the part of the Examiner to refute the arguments presented by the Applicants. This situation is particularly egregious in view of the fact that it was necessary for Applicants to file an appeal to argue against the Examiner's interpretation of the Williamson et al reference. The appeal, as noted above, was simply withdrawn and a new reference was substituted in place of the Williamson et al reference, and therefore even after the long prosecution of this application, Applicants still do not have the benefit of knowing why or how the Examiner disagrees with Applicants' arguments concerning the Williamson et al reference (and, for that matter, the same is true with regard to the Kates et al reference).

Applicants believe the Examiner's current rejection of the claims based on Williamson et al and Kates et al can be summarized as follows. The Examiner believes the Williamson et al reference teaches all of the subject matter of each of independent claims 15 and 22, including estimating an estimated value of a system distance and then generating at least one feedback-reducing parameter dependent on this estimated value of the system distance, but the Examiner acknowledges (at page 5 of the Office Action) that the Williamson et al reference does not explicitly teach that the system distance is defined as a distance of the loop gain to a predetermined stability limit of the feedback loop. The Examiner is relying on the Kates et al reference as teaching the use of a system distance, defined as the distance of the loop gain to a predetermined stability limit of the feedback loop, to

generate at least one feedback-reducing parameter dependent on an estimated value of such a system distance.

In response, Applicants do not agree that the Williamson et al reference makes any use whatsoever of an estimated value of a system distance for the purpose of reducing feedback. Applicants further submit that the Kates et al reference, although making use of the system distance as defined in the specification and claims of the present application, does not use the system distance in the manner set forth in independent claims 15 and 22 of the present application so as to generate the feedback-reducing parameter dependent on the estimated value of the system distance, so that the feedback-reducing parameter is adjustably set dependent on this estimated value.

As argued in Applicants' Appeal Brief, the Williamson et al reference does not make any use whatsoever of a "distance" (much less the "system distance, which is a commonly used and well-understood factor that is used to assess the stability of a system experiencing feedback). Instead, the Williamson et al reference evaluates feedback, and an appropriate response to the evaluated feedback, dependent on modeling the transfer function as a delay function 308. In fact, at column 8, lines 6-9 (the passage cited by the Examiner), the Williamson et al reference emphasizes that the transfer function is modeled as a *pure* delay function 308. It is only because the Examiner has mischaracterized this passage in the Williamson et al reference as somehow estimating a value of the system distance (which is nowhere mentioned in the Williamson et al passage cited by the Examiner, nor elsewhere in that reference), that the Examiner has then been able to construct the argument that it would have

been obvious for a person of ordinary skill to make use of the system distance that is actually disclosed in the Kates et al reference.

On this particular point, Applicants submit there is no basis to formulate the obviousness rejection on the basis of whether it would have been obvious to modify the (alleged) use of the estimated value of the system distance that the Examiner contends is disclosed in the Williamson et al reference, so as to use that (allegedly) estimated value in the manner disclosed in the Kates et al reference. Instead, the correct formulation of the issue of obviousness based on these references would be whether it would have been obvious to a person of ordinary skill to reject the use of the pure delay function 308 that is explicitly disclosed in the Williamson et al reference, and to *instead* make use of the system distance that is disclosed in the Kates et al reference.

Applicants respectfully submit that the way the Examiner has formulated the original rejection makes it too easy for the Examiner to allege that a person of ordinary skill in the art would find any point of intersection between these two references, other than the fact that they both generally deal with the problem of feedback cancellation. These two references evaluate and compensate for feedback in completely different ways (Williamson et al does so based on the aforementioned modeling of the feedback transfer function as a pure delay signal, and Kates et al does so using (in a manner different from the Applicants) the aforementioned system distance). Because of the way the Examiner has incorrectly formulated the premise underlying the obviousness rejection, Applicants submit the Examiner has alleviated answering the fundamental question of why a person of ordinary skill in the art would (allegedly) reject the use of the pure delay function for modeling the transfer function

of the acoustic feedback, and instead make use of system distance as disclosed in Kates et al.

Moreover (as also previously argued by the Applicants but not responded to by the Examiner), although the Kates et al reference does make use of a value that corresponds to the system distance disclosed and claimed in the present application (even though the Kates et al reference does not explicitly make use of the term "system distance"), the Kates et al reference does not make use of the value corresponding to the system distance in the same manner as set forth in the claims. Therefore, even if such a person of ordinary skill did substitute the use of the value corresponding to system distance disclosed in Kates et al in place of the pure delay function 308 disclosed in Williamson et al (for reasons unknown to the present Applicants), the subject matter of the independent claims of the application still would not result.

The Examiner contends that the feedback transfer function W that is used in the calculation identified at column 15 of the Kates et al reference makes use of the system distance in the manner disclosed and claimed in the present application. Applicants do not agree that this is the case. As noted by the Examiner, the Kates et al reference discloses that this transfer function W is set to zero in order to determine the maximum gain  $H_{max}$  et al frequencies. The Kates et al reference then states that the system will be stable if  $H_{max}$  (MARBI) I is less than 1, and this allows the maximum gain  $H_{max}$  to be measured as 1/MARBI. The Kates et al reference also states that when the hearing aid is turned on, W (i.e.  $W_0$ ) will be equal to MARB.

Therefore, the aforementioned calculations are undertaken in the Kates et al reference in order to determine the *maximum gain H<sub>max</sub>*, but there is no teaching

whatsoever in the Kates et al reference to set the feedback transfer function W, or any parameter thereof, in an adjustable manner dependent on the system distance, as explicitly set forth in each of claims 15 and 22. In the Kates et al reference, the transfer function W can be set to different values in order to facilitate the aforementioned calculations, but this is not the same as adjustably setting the transfer function W dependent on an estimated value of the system distance, as disclosed and claimed in the present application.

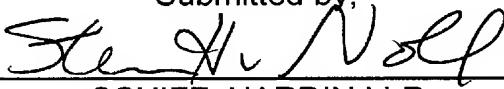
Independent claims 15 and 22, therefore, would not have been obvious to a person of ordinary skill in the field of compensating feedback in acoustic systems, under the provisions of 35 U.S.C. §103(a), based on the teachings of Williamson et al and Kates et al. The same is true with regard to claims 16-20 depending from claim 15, and claims 23-25 depending from claim 22.

Claims 21 and 26 were rejected under 35 U.S.C. §103(a) as being unpatentable over Williamson et al and Kates et al, further in view of Nielsen et al. The above arguments are equally applicable to this rejection. For those reasons, even if the Williamson et al/Kates combination were further modified in accordance with the teachings of Nielsen et al, the subject matter of claims 21 and 26 still would not result.

All claims of the application are therefore submitted to be in condition for allowance, and early reconsideration of the application is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required, or to credit any overpayment to account No. 501519.

Submitted by,

 (Reg. 28,982)

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